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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/751,621	01/05/2004	Hermann Kauth	PO-8018 / LeA 36,402	2442
157	7590	10/20/2004	EXAMINER	
BAYER MATERIAL SCIENCE LLC			BOYKIN, TERRESSA M	
100 BAYER ROAD			ART UNIT	
PITTSBURGH, PA 15205			PAPER NUMBER	

1711

DATE MAILED: 10/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/751,621	Applicant(s) KAUTH ET AL.	
	Examiner Terressa M. Boykin	Art Unit 1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7-16-04</u> . | 6) <input type="checkbox"/> Other: _____ |

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Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by USP 5235026 see abstract col. 2 through col. 3 line 65 , col. 4 lines 50-59, col. 5 lines 5-12, col. 6 lines 35 though 45 and examples.

With regard to applicants' claims 1,2 and 3 note that **USP 5235026** discloses a continuous process for the production of polycarbonates by interphase polycondensation wherein the organic phase and the aqueous phase are combined in a tube, forming chlorocarbonic acid ester and further alkali hydroxide is added at, or shortly after, the maximum concentration of said ester is reached. Similarly to applicants' claimed invention. The reference has found that secondary phosgene reactions (which would inherently include therein the formation of nitrogen side moieties) in the continuous production of polycarbonates by the two phase interfacial method can be avoided by the following:

- (i) limiting the amount of said alkali metal hydroxide to the minimum amount necessary to dissolve the diphenol at the temperatures and pressures prevailing in the reaction, and
- (ii) adjusting the volume ratio of the organic phase to aqueous phase so that a water-

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in-oil emulsion is formed during the phosgenation reaction, and

(iii) introducing additional alkali metal hydroxide at, or shortly after reaching, the maximum concentration of chlorocarbonic acid ester in the solution.

The reference discloses specifically a process for the continuous production of production of polycarbonate by the two phase method from:

- a) diphenols,
- b) phosgene,
- c) optionally chain terminators,
- d) optionally catalysts and optionally
- e) branching agents

It should be noted that although the reference states that catalysts are optional, according to the description, the addition of a limited amount of the alkali metal hydroxide is *not* optional as noted in col. 3 lines 49 through 54 as well as in the example.

The reference further states that known chain terminators or branching agents may be added to the diphenols in known quantities before, during or after the phosgenation. The reference acknowledges that suitable chain terminators and branching agents are known in the art. Preferred chain terminators are phenol, cumyl phenol, isooctyl phenol, p-tert. butyl phenol. Preferred branching agents are trisphenols and tetraphenols and also 3,3-bis-(3-methyl-4-hydroxyphenyl)-2-oxo-2,3-dihydroindole.

Thus the reference discloses a method of limiting or maintaining a concentration of the catalyst at a level of at least 0.012 per mol of diphenol. Although stated differently by the reference, this figure is an inherent amount of the invention since such amount is necessary and required so that, the reference stated, *"just enough alkali metal hydroxide is present to dissolve the phenolic reaction components at the reaction temperature and pressures"* which fall within applicants parameters as discussed in the

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specification on pages 12 and 13 under applicants Examples 1 and 2. Note that in col. 7 line 7 that applicants discloses that the alkali concentration is 0.2% which would also fall within that as claimed by applicants. Identical to applicants specification on 5 line 5 wherein additional alkali metal solution which is 85% to 60% of the total alkali metal hydroxide solution to be further added, the reference also demonstrates in the example and in claim 1 lines 34 –39 of col. 8 that the additional alkali metal hydroxide has a concentration of 0.% to 0.%% by weight is established in the aqueous phase.

With regard to applicants' claim 4 regarding a molded article, note that the reference teaches in col. 6 lines 35 through 45 that the high molecular weight polycarbonates obtainable by the process according to the invention are known plastics which may be processed by standard methods to moldings of any kind, including for example films or sheets, and which may be used for any of the industrial applications typical of polycarbonates, for example in the electrical field, in house construction (cover panels and facings) and in the safety field.

Thus in view of the above, there appears to be no significant difference between the reference and that which is claimed by applicant(s). Any differences not specifically mentioned appear to be conventional. Consequently, the claimed invention cannot be deemed as novel and accordingly is unpatentable.

35 USC 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over by USP 5235026 see abstract col. 2 through col. 3 line 65 , col. 4 lines 50-59, col. 5 lines 5-12, col. 6 lines 35 through 45 and examples.

With regard to claims 1- 4 the reference discloses a polycarbonate prepared from the same components as claimed by applicants except for the particular minimum amount of 0.012 mol per mol of diphenol. However, this figure is an obvious amount of the invention since such amount is necessary and required so that, the reference stated, *"just enough alkali metal hydroxide is present to dissolve the phenolic reaction components at the reaction temperature and pressures"* which fall within applicants parameters as discussed in the specification on pages 12 and 13 under applicants Examples 1 and 2.

Note that in col. 7 line 7 that applicants discloses that the alkali concentration is 0.2% which would also fall within that as claimed by applicants. Identical to applicants specification on 5 line 5 wherein additional alkali metal solution which is 85% to 60% of the total alkali metal hydroxide solution to be further added, the reference also demonstrates in the example and in claim 1 lines 34 –39 of col. 8 that the additions alkali metal hydroxide has a concentration of 0.% to 0.%% by weight is established in the aqueous phase.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the particular minimum amount of 0.012 mol per mol of diphenol since the reference states in col. 5 lines 10-12 that there should only contain just enough alkali metal hydroxide to dissolve the phenolic components in the aqueous phase and such an amount is described in the example of the reference to be the same

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as described in applicants' specification.

Correspondence

Please note that the cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, all U.S. patents and patent application publications are available on the USPTO web site (www.uspto.gov), from the Office of Public Records and from commercial sources. Applicants may be referred to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebc/index.html> or 1-866-217-9197.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Terressa Boykin whose telephone number is 571 272-1069. The examiner can normally be reached on Monday through Friday from 6:30am to 3:00pm.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. The general information number for listings of personnel is (571-272-1700).

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

tmb

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A handwritten signature in black ink, appearing to read "Terressa Boykin". The signature is written in a cursive, flowing style with a large initial 'T'.

Examiner Terressa Boykin

Primary Examiner

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